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4 Port USB 2.0 Extender over Gigabit Ethernet or Cat5e/6 Cabling - 100m (330ft)

USB2G4LEXT2

*actual product may vary from photos

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Manual Revision: 02/06/2014

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Introduction

Packaging Contents

- 1 x USB 2.0 Extender Local Unit
- 1 x USB 2.0 Extender Remote Unit
- 1 x USB A-B Cable
- 1 x Universal Power Adapter (NA/ UK/ EU)
- 1 x Mounting Kit
- 1 x Instruction Manual

System Requirements

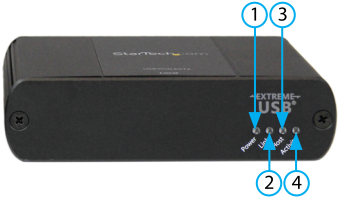
- Windows® 8 (32/64bit), 7 (32/64), Vista (32/64), XP (32/64), 2000, Windows® Server 2012, 2008 R2, 2003 (32/64), Windows CE 6.0, Mac OS 10.x (Tested up to 10.9), Linux®
- USB-enabled computer system with an available USB port
- Available AC power outlet
- Cat5e/6 Ethernet Cable(s)
- Preconfigured Local Area Network (for network connect setup)

Product Overview

The Local Extender

The Local Extender connects to the computer using a standard USB 2.0 cable. Power for this unit is provided by the host computer.

Front View



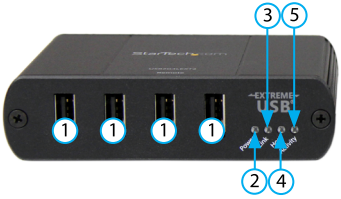
Rear View

Item	Type	Description
1	Power LED (Blue)	LED turns on when power is supplied, off when no power is supplied by the host computer.
2	Link LED (Green)	Indicates a valid USB link is established between the Local and Remote units. The LED turns on when a link between Local and Remote Extender is established and turns off when there is no link. Fast blinking indicates the unit is in "Pairing Mode" while slow blinking indicates the unit is attempting to establish a link.
3	Host LED (Green)	Indicates that the extender is properly connected to the host computer. The LED blinks when the extender is in a suspended state.
4	Activity LED (Amber)	Indicates data transmission is occurring between the Local and Remote units. The LED blinks intermittently with or without a USB device connected. When the Local and Remote Extender are in suspend mode the LED is off.
5	Pair	Used to establish a paired connection between Local and Remote Extenders.
6	USB Host Port	Used to connect the Local Extender to the host computer. Accepts a USB Type B connector into the Local Extender.
7	Link Port (RJ45)	Accepts a RJ45 connector for Cat 5e (or better) cabling to connect the Local Extender to the Remote Extender.
8	Config	Reserved.

The Remote Extender

The Remote Extender provides USB Type A ports for standard USB devices, and allows you to connect up to four USB devices directly. Additional devices may be connected by attaching USB hubs to the Remote Extender. The Remote Extender is powered by an external AC adapter and can supply up to 600ma to each USB port.

Front View



Rear View

Item	Type	Description
1	USB Device Ports	Accepts USB device(s) using Type A connectors.
2	Power LED (Blue)	LED turns on when power is supplied, off when no power is supplied.
3	Link LED (Green)	Indicates a valid USB link is established between the Local and Remote units. The LED turns on when a link between Local and Remote Extender is established and turns off when there is no link. Fast blinking indicates the unit is in "Pairing Mode" while slow blinking indicates the unit is attempting to establish a link.
4	Host LED (Green)	Indicates that the extender is properly connected to the host computer. The LED blinks when the extender is in a suspended state.
5	Activity LED (Amber)	Indicates data transmission is occurring between the Local and Remote units. The LED blinks intermittently with or without a USB device connected. When the Local and Remote Extender are in suspend mode the LED is off.
6	Power Port	Connects to the AC power supply. Required at the Remote Extender for proper operation.
7	Pair	Used to establish a paired connection between Local and Remote Extenders.
8	Link Port (RJ45)	Accepts a RJ45 connector for Cat 5e (or better) cabling to connect the Local Extender to the Remote Extender.
9	Config	Reserved.

Installation

Note: Units will be pre-paired with each other out of the box. If they are not paired, follow the instructions provided in the section for Pairing a Local and Remote Extender.

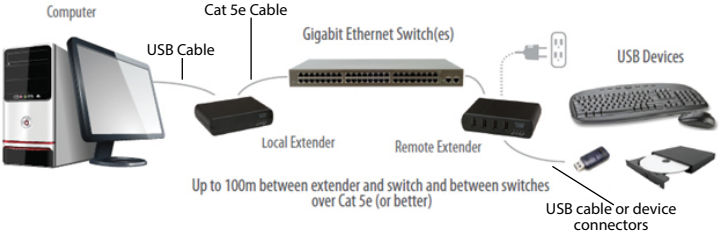
Network Connect

Installing the USB2G4LEXT2 on a Local Area Network

Requirements

To complete the installation, you will also require the following items that are not included with the product:

- USB compatible computer (host computer) with a USB compliant operating system
- USB compatible device(s)
- Two Cat 5e (or better) Ethernet cables
- Preconfigured Local Area Network



Preparing Your Network

Your network must be properly configured to achieve USB 2.0 throughput and for maximum stability and reliability of your devices. Consult with your network administrator prior to installation. Using the USB2G4LEXT2 over a network requires:

- Local Extender and Remote Extender to be on the same subnet
- Pre-installed and configured Local Area Network

Note: Some networks may be configured to block devices with unfamiliar MAC addresses. If this is the case, you will need to provide your network administrator the MAC addresses of the Local and Remote Extender units. These can be found on the label on the bottom of each unit.

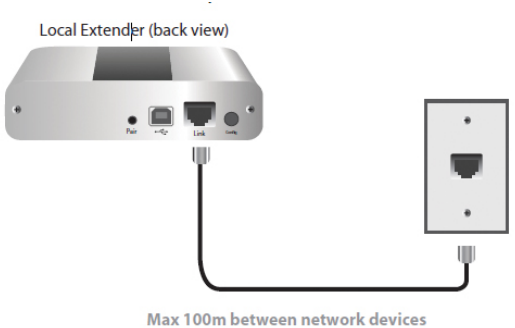
Preparing Your Site

Before you can install the USB2G4LEXT2, you need to prepare your site:

1. Place the computer where desired and set it up.
2. Ensure that where you want to locate the USB device(s) is within 100m (330ft) of the switch.
3. Ensure that where you want to locate the computer is within 100m (330ft) of the switch.
   Note: The cable distance between switches must be no greater than 100m (330ft).

Installing the Local Extender

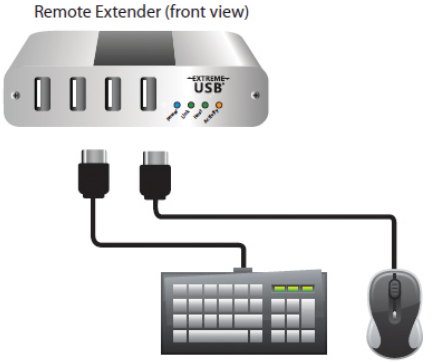
1. Place the Local Extender near the computer.
2. Connect the provided USB cable between the Local Extender host port and a USB port on the host computer.
3. Connect a Cat 5e (or better) cable (not provided) into to a network switch or wall network port connected to a switch.
4. Connect the opposite end of the Ethernet cable into the Link port of the Local Extender



Installing the Remote Extender

1. Connect a Cat 5e (or better) cable (not provided) into a network switch or wall network port connected to a switch.
2. Connect the opposite end of the Ethernet cable into the Link port of the Remote Extender
3. Place the Remote Extender near the USB device(s).
4. Connect the provided power adapter to an available AC power outlet, and to the Power port of the Remote Extender.

5. Attach your USB device(s) to the Remote Extender.



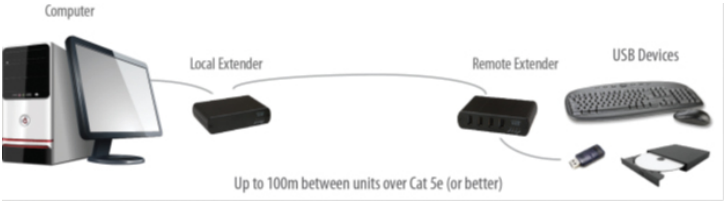
Direct Connect

Installing the USB2G4LEXT2 as Direct Connect

Requirements

To complete the installation, you will also require the following items that are not included with the product:

- USB compatible computer (host computer) with a USB compliant operating system
- USB compatible device(s)
- One or Two Cat 5e (or better) cables



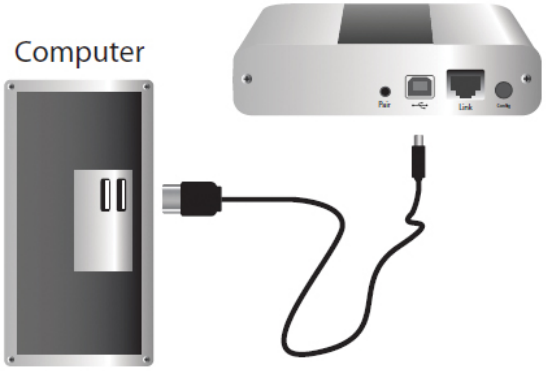
Preparing Your Site

Before you can install the USB2G4LEXT2, you need to prepare your site:

1. Place the computer where desired and set it up.
2. Ensure that where you want to locate the USB device(s) is within 100m (300ft) of the computer. If not, adjust the location of the devices and/or computer accordingly.

Installing the Local Extender

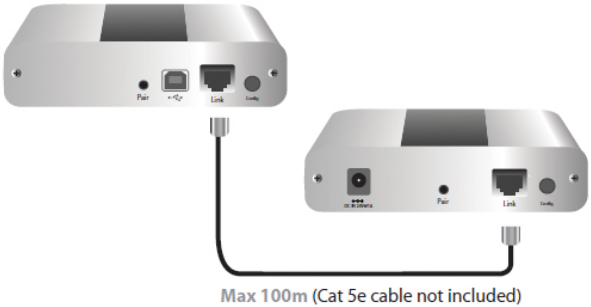
1. Place the Local Extender near the computer.
2. Connect the provided USB cable between the Local Extender's host port and a USB port on the host computer.



Connecting the Local Extender to the Remote Extender

With Surface Cabling

1. Connect the Cat 5e or better cable into the Link port of the Local Extender.
2. Connect the Cat 5e or better cable into the Link port of the Remote Extender.

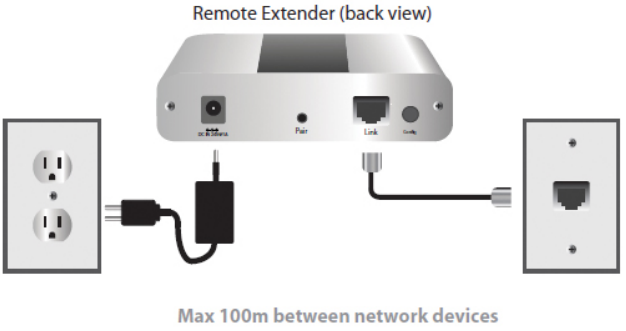


With Wall Network Ports

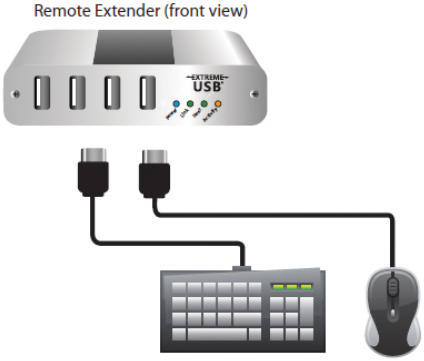
1. Connect a Cat 5e or better cable (not provided) into the RJ45 wall outlet near the host computer.
2. Connect the opposite end of the cable into the Link port of the Local Extender.
3. Connect a Cat 5e or better cable (not provided) into the RJ45 wall outlet near the USB devices.
4. Connect the opposite end of the cable into the Link port of the Remote Extender.

Installing the Remote Extender

1. Place the Remote Extender near the USB device(s).
2. Connect the provided power adapter to an available AC power outlet, and to the Power port of the Remote Extender.



3. Attach your USB device(s) to the Remote Extender.



Verifying Installation

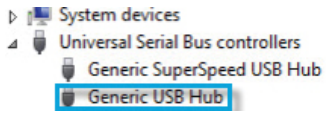
1. On the Local and Remote Extender, check that the Power, Status, Link and Host LEDs are on.

   Note: For direct connect, if the Host or Link LEDs are permanently off, then the cabling between the Local and Remote Extender may not be installed properly or is defective.

   For network connect, if the Link LED is blinking, then the network connection between the Local and Remote Extender is not complete and there may be faulty cabling, network components, misconfigured network components, or the Local and Remote Extender may need to be re-paired together (see the section on pairing a Local and Remote Extender).

2. **Windows:** Open the Device Manager by right-clicking on Computer, and then select Manage. In the new Computer Management window, select Device Manager from the left window panel (For Windows 8, open the Control Panel and select Device Manager).

   Expand the entry for Universal Serial Bus controllers by clicking the "+" sign. If the USB2G4LEXT2 has been installed correctly you should find it listed as a "Generic USB Hub".



3. **Mac OS:** Open the System Profiler to confirm that the USB2G4LEXT2 has installed correctly. In the left hand column under Hardware, select "USB" and inspect the right hand panel. If the extender has been installed correctly, you should find it listed as a "Hub" under the USB High-Speed Bus/USB Bus.

   To open System Profiler in OS X: Open the Finder, select Applications, then open the Utilities folder and double click on the System Profiler icon.

Pairing and Unpairing

Pairing the Local and Remote Extender

The extenders will be paired with each other out of the box, so no pairing action should be required. However, if you wish to change the Local and Remote Extender pairings across a network, then the following steps must be taken:

1. Ensure the Local and Remote Extender are directly connected to each other, or are connected to the same subnet on your network.
2. Press and hold the Pairing button on the back of the Local Extender. Release the button within 10 seconds. The Link LED will start flashing.
3. Within 10 minutes of activating the pairing mode on the Local Extender, press and hold the Pairing button on the back of the Remote Extender. Release the button within 10 seconds. The Link LED will start flashing.
4. The Link LED on both units may start flashing more slowly before finally turning on. Once the Link LEDs are solid, the link is established between both extenders.

Note: If more than 10 minutes pass before the units are paired, then the extenders will switch back to regular mode and reestablish the previous links they had, if any. To cancel pairing mode, press and hold the Pairing button a second time. Release it within 10 seconds.

Unpairing an Extender

If for any reason an extender needs to have its pairing removed, this can be done by pressing and holding the Pair button for longer than 10 seconds. Once this is completed the unit will not be paired to any other extender.

Compatibility

The USB2G4LEXT2 complies with USB 1.1 and USB 2.0 specifications. However, there is no guarantee that all USB devices or hosts will be compatible with the USB2G4LEXT2, as there are a number of different characteristics that may impact the operation of USB devices over extended distances.

Troubleshooting

The following table provides troubleshooting tips. The topics are arranged in the order in which they should be executed in most situations.

Problem	Cause	Solution
All LEDs on the Local Extender are off.	• The Local Extender is not receiving power from the USB port.	1. Ensure that the host computer is connected to the Local Extender. 2. Move the USB connector to another USB port on the host computer.
All LEDs on the Remote Extender are off.	• The Remote Extender is not receiving power from the AC adapter.	1. Ensure that the AC power adapter is properly connected to the Remote Extender. 2. Check that the AC adapter is connected to a live source of electrical power. Check that the Remote power LED is illuminated.
Link LEDs on the Local and the Remote Extenders are off.	• There is no connection between the Local and Remote Extenders.	1. Ensure Cat 5e cable is connected between the Local and Remote Extenders. Cat 5e or better cable, UTP with a straight through connector and no crossovers, and 8 conductor RJ45 connectors are used at both ends. 2. Connect a short Cat 5e patch cord between the Local and Remote Extenders to determine if the original Cat 5e cable is defective.

Link LEDs are blinking.	• There is no connection between the Local and Remote Extenders. • Units may not be paired to each other. • Network switches exist on different subnets. • Network switch(es) are blocking traffic from the extenders.	1. Ensure both the Local and Remote Extenders are connected together directly or are connected to active network switches. 2. Re-pair the units together. 3. Ensure the network switches can communicate with each other and are on the same subnet. 4. Ensure the network switches are not blocking traffic from the extenders either based on MAC address or due to traffic patterns. 5. Consult with your network administrator.
Link LED on the Local and the Remote Extenders are blinking slowly.	• The extenders are paired with each other but have not yet established a link.	1. Wait for a few minutes for the LEDs to go solid. 2. If LEDs do not go solid, contact your network administrator to determine if any traffic is being blocked between the extenders.
Link LED on the Local Extender is on, Host LED on the Local Extender is off.	• The host computer is not powered on. • The Local Extender is not connected to the computer. • The host computer is not recognizing the Local. Extender. • The computer does not support USB hubs. • The RG2304GE-LAN is malfunctioning.	1. Disconnect all USB devices from the Remote Extender. 2. Disconnect the Local Extender from the computer. 3. Disconnect the Remote Extender from the AC power adapter. 4. Reconnect the Local Extender to the computer. 5. Reconnect the Remote Extender to the AC power adapter. 6. In the Universal Serial Bus controllers section of Device Manager, check that the RG2304GE-LAN is recognized as a “Generic USB Hub”.

My USB device does not work properly.	• Insufficient bandwidth is available on the network to support the device.	1. Connect the Local and Remote Extenders directly to each other and try the USB device again.
My USB device does not work at all.	• Insufficient bandwidth is available on the network to support the device. • The Local Extender is paired to the wrong Remote Extender.	1. Connect the Local and Remote extenders directly to each other and try the USB device again. 2. Follow the instructions on page 11 and pair the Local to the Remote Extender that is connected to the device you wish to use.

Specifications

Cabling	Cat 5e UTP or better
Ports	4
Local Unit Connectors	1 x RJ-45 Female 1 x USB B (4 pin) Female
Remote Unit Connectors	1 x RJ-45 Female 4 x USB A (4 pin) Female
Maximum Cable Length	330 ft [100 m]
Maximum Data Transfer Rate	1 Gbps (LAN) 480 Mbps (USB)
Enclosure Material	Steel
Dimensions (LxWxH)	100 x 76 x 26 mm
Weight	12.8 oz (363 g)
LEDs	Local Extender – 4 (Power, Link, Host, Activity) Remote Extender – 4 (Power, Link, Host Activity)
Power Adapter	24V, 1A DC
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-10°C to 60°C (14°F to 140°F)
Humidity	20-80% RH
Compatible Operating Systems	Windows® 8 (32/64bit), 7 (32/64), Vista (32/64), XP (32/64), 2000, Windows® Server 2012, 2008 R2, 2003 (32/64), Windows CE 6.0, Mac OS 10.6 and up (Tested up to 10.9), Linux®

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